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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/635,748	BOLENDER ET AL.	
	Examiner	Art Unit	
	Alexander S. Beck	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Oct. 25, 2007, has been entered. Claims 1-68 are currently pending and an Office action on the merits follows.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 39-41 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,924,789 to Bick ("Bick").

As to claim 39, Bick discloses an integrated keypad assembly in Figures 3 and 4 for an electronic device comprising: a keymat (17, 18, 27-30) having a plurality of keys (18) formed therein, the keymat deformable to actuate a switch sensor (33a, 33b); and a capacitive sensor (19) that is coupled to and integrated within the keymat (Bick, col. 2, l. 35 – col. 3, l. 29).

As to claim 40, Bick discloses wherein the capacitive sensor (19) comprises sensors having at least a portion thereof disposed around an area to be lighted (Bick, col. 1, ll. 59-61; see also col. 2, l. 35 – col. 3, l. 29).

As to claim 41, Bick discloses wherein the keymat (17, 18, 27-30) comprises a rubber material (Bick, col. 2, ll. 47-49).

As to claim 43, Bick discloses wherein the keymat (17, 18, 27-30) is deformable to actuate the switch sensor (33a, 33b) via a key post (32a) (Bick, col. 2, l. 35 – col. 3, l. 29).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bick in view of U.S. Patent No. 6,188,391 to Seely et al. ("Seely").

As to claim 1, Bick discloses a capacitive sensing device in Figures 3 and 4 for use in a keypad assembly of an electronic system, said capacitive sensing device comprising: a substantially transparent capacitive sensor (19, 28), said substantially transparent capacitive sensor configured to be disposed within said keypad assembly without requiring the formation of key post holes therethrough; said substantially transparent capacitive sensor is coupled to a keymat (17, 18, 27, 29, 30) having a plurality of keys (18) formed therein, said substantially transparent capacitive sensor integrated within said keymat; and said substantially transparent capacitive sensor having a flexibility which enables desired tactile response during use of said plurality of keys of said keypad assembly (Bick, col. 2, l. 35 – col. 3, l. 29).

Bick does not disclose expressly wherein said substantially transparent capacitive sensor is a single sheet. Seely discloses a capacitive sensor in Figures 6-8B, analogous in

art with Bick in that both are directed towards detecting user input in a semiconductor device through the use of capacitor type sensors, with a patterning of sensors that consolidates the conventional horizontal layer of sensors and vertical layer of sensors into one single sheet layer (Seely, col. 5, ll. 48-59). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the substantially transparent capacitive sensor of Bick, such that the sensors were patterned as taught/suggested by Seely to consolidate the sensor into a single layer. The suggestion/motivation for doing so would have been to achieve a compact capacitive sensing device that significantly reduces the cost of production without adversely affecting its functionality (Seely, col. 2, ll. 15-25).

As to claim 2, Bick discloses wherein said substantially transparent capacitive sensor (19, 28) comprises a substantially transparent substrate (28) wherein the patterning of capacitive sensors (22, 24) is comprised of a substantially transparent material and is disposed above said substantially transparent substrate (Bick, col. 2, l. 35 – col. 3, l. 29). Furthermore, as discussed above Seely discloses a capacitive sensor with a patterning of sensors that consolidates the conventional horizontal layer of sensors and vertical sensors into one single sheet layer. Specifically, Seely discloses in Figures 6-8B a first pattern of conductive sensors (68, 69) disposed within a sensing region; a second pattern of conductive sensors (68) ("floating") disposed within said sensing region, said first pattern of conductive sensors (68, 69) and said second pattern of conductive sensors (68) ("floating") disposed in a common single layer; and a plurality of conductive bridges (104) disposed to electrically couple portions of said second pattern of conductive sensors (68) ("floating") (Seely, col. 5, l. 48 – col. 7, l. 11). Therefore, when the teachings of Bick and Seely are combined for the reasons stated above, it is inherent that the first and second patterns are disposed above the transparent substrate and the conductive sensors

are comprised of a substantially transparent material (because the embodiment of Bick requires the transmission of light through the capacitive sensors).

As to claim 3, Seely discloses wherein said plurality of conductive bridges is opaque (Seely, col. 5, l. 48 – col. 6, l. 31).

As to claim 4, Bick discloses wherein said substantially transparent material comprises indium tin oxide (Bick, col. 2, ll. 53-58).

As to claim 13, note the above discussion with respect to claims 1 and 2. Neither Bick nor Seely disclose expressly wherein said plurality of conductive bridges is selectively disposed to lessen visual interference with indicia of said keys of said keypad assembly (e.g., at least one of said plurality of keys). In order to establish obviousness under 35 U.S.C. 103, it must appear that the state of relevant prior art was such that the claimed invention would have been obvious to one of ordinary skill in the art; in judging ordinary level of skill in the art, it is the level of skill of those who normally attack the problems of the art that counts; persons who do most of the problem solving in involved art are graduate engineers; as such they are chargeable with general knowledge concerning principles of engineering, outside the narrow field involved, and with skills, ingenuity, and competence of the average professional engineer. *Mueller Brass CO. v. Reading Industries*, 176 USPQ 361, 372 (1972). In the instant case, the teachings of Bick and Seely are combinable for the same reasons set forth in the paragraphs regarding claims 1 and 2. Bick requires the capacitive sensor (19) to be substantially transparent so as to permit a light emitted from EL layer (29) to penetrate therethrough and illuminate indicia on the keys (18) (Bick, col. 2, l. 35 – col. 3, l. 29). However, Seely discloses electrically connecting portions of a second patterning of capacitive sensors through the use of opaque conductive bridges (Seely, col. 5, l. 48 – col. 6, l. 31).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to selectively dispose the conductive bridges so as to lessen visual interference with indicia of at least one of said plurality of keys (18). The suggestion/motivation would have been because a graduate engineer, with the ingenuity and competence of the average professional engineer, would understand that a fundamental problem occurs when combining the teachings of Bick and Seely. Specifically, disposing an opaque material in between an EL layer emitting a light source and an indicia on a key would disadvantageously block a portion of the emitted light, thus reducing the brightness at the surface of the key as perceived by an individual. Therefore, going back to the original problem, a fundamental solution is to minimize the occurrence of the opaque material disposed in between the EL layer emitting a light source and the indicia of said keys of said keypad assembly, resulting in the limitations as presently claimed.

As to claim 14, all of the claim limitations have already been discussed and met by Bick and Seely as detailed in the above paragraphs with respect to claims 1 and 2.

As to claim 58, all of the claim limitations have already been discussed and met by Bick and Seely as detailed in the above paragraphs with respect to claims 1 and 2.

As to claims 15, 21, 25, 26, 44-46, 55-57, 59, 67 and 68, all of the claim limitations have already been discussed and met by Bick and Seely as detailed in the above paragraphs with respect to claims 1-4 and 13.

4. Claims 5-12, 16-20, 22-24, 47-54 and 60-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bick and Seely as applied to claims 1-4, 13-15, 21, 25, 26, 44-

46, 55-59, 67 and 68 above, and further in view of U.S. Patent No. 6,664,489 to Kleinhans et al. ("Kleinhans").

As to claims 5 and 10, note the above discussion with respect to claims 1 and 2. Neither Bick nor Seely disclose expressly wherein the first and second patterns of conductive sensors further comprise: at least a portion comprised of a substantially opaque conductive material electrically coupled to said substantially transparent material of said first and second patterns of conductive sensors. Kleinhans discloses a capacitive sensing device in Figures 1-3, analogous in art with Bick and Seely in that all are directed towards detecting user input in a semiconductor device through the use of capacitor type sensors, wherein a substantially transparent conductive sensor (12) comprises at least a portion comprised of a substantially opaque conductive (23) material electrically coupled to the substantially transparent conductive sensor (12) (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the capacitive sensing device of Bick and Seely, such that the first and second patterns of conductive sensors comprise at least a portion comprised of a substantially opaque conductive material electrically coupled to said substantially transparent material of the first and second patterns of conductive sensors, as taught/suggested by Kleinhans. The suggestion/motivation for doing so would have been to represent indicia on a surface to be viewed by a user through light emitted by a light-emitting surface (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

As to claims 6 and 12, Kleinhans further discloses in Figures 1-3 wherein said portion of said substantially opaque conductive material further comprises openings (22) extending therethrough such that light is able to pass through said openings (22) of said substantially opaque conductive material (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

As to claim 7, Seely discloses wherein said first pattern of conductive sensors is disposed to minimize capacitive interference with at least one of said plurality of conductive bridges (Seely, col. 4, ll. 47-52).

As to claims 8 and 11, Kleinhans further discloses in Figures 1-3 wherein said portion of said substantially opaque conductive material (23) overlies at least a portion of said substantially transparent material of said conductive sensors (12) (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

As to claim 9, Kleinhans does not disclose expressly wherein the opaque material is conductive ink. Seely discloses wherein a substantially opaque conductive material comprises conductive ink and is disposed on the surface of the single sheet conductive sensor (Seely, col. 5, l. 48 – col. 6, l. 54.) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the opaque material of Kleinhans, such that it was conductive ink, as taught/suggested by Seely. The suggestion/motivation for doing so would have been because carbon ink is an inexpensive process (Seely, col. 5, l. 48 – col. 6, l. 54).

As to claims 16-20, 22-24, 47-54 and 60-66, all of the claim limitations have already been discussed and met by Bick, Seely and Kleinhans as detailed in the above paragraphs with respect to claims 5-12.

5. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bick in view of Kleinhans.

As to claims 42, all of the claim limitations have already been discussed and met by Bick and Kleinhans as detailed in the above paragraphs with respect to claims 5 and 6.

6. Claims 27-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bick in view of Seely and Kleinhans.

As to claim 27, all of the claim limitations have already been discussed and met by Bick, Seely and Kleinhans as detailed in the above paragraphs with respect to claims 1, 2 and 5.

As to claims 28-38, all of the claim limitations have already been discussed and met by Bick, Seely and Kleinhans as detailed in the above paragraphs with respect to claims 3, 4 and 6-13.

7. Claims 39, 40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,137,427 to Binstead ("Binstead") in view of Bick.

As to claim 39, Binstead discloses an integrated keypad assembly for an electronic device comprising: a keymat (50) having a plurality of keys formed therein, wherein said keymat is deformable; and a capacitive sensor (12, 14) that is coupled to and integrated within said keymat (Binstead, Figs. 2b, 2c). Binstead does not disclose expressly wherein said keymat is deformable to actuate a switch sensor. Bick discloses an integrated keypad assembly for an electronic device comprising both a capacitive sensor (19) and keypad layer that is deformable to actuate a switch sensor (33a, 33b) below the capacitive sensor (Bick, Fig. 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Binstead by replacing the capacitive sensor with that of Binstead and adding the actuatable switch sensor below the

deformable layer, as taught/suggested by Bick. The suggestion/motivation for doing so would have been to use the keypad assembly in two modes of operation, a touch pad mode (e.g., capacitive sensor) or a button depression mode (e.g., actuatable switch sensor) (Bick, Abstract).

As to claim 40, Binstead does not disclose expressly wherein said capacitive sensor comprises sensors having at least a portion thereof disposed around an area to be lighted. However, Bick further discloses wherein the capacitive sensor introduced in claim 39 comprises sensors having at least a portion thereof disposed around an area to be lighted (Bick, col. 1, ll. 59-61; see also col. 2, l. 35 - col. 3, l. 29). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the teachings of Binstead and Bick such that the capacitive sensor comprised sensors having at least a portion thereof disposed around an area to be lighted, as taught/suggested by Bick. The suggestion/motivation for doing so would have been to illuminate the keypad assembly, thereby making the device more user-friendly in environments lacking sufficient ambient light, as one of ordinary skill in the art would appreciate.

As to claim 43, Binstead as modified by Bick teaches/suggests wherein said keymat (Binstead, 50) is deformable to actuate the switch sensor (Bick, 33a, 33b) via a key post (Bick, 32a) (Bick, col. 2, l. 35 - col. 3, l. 29).

8. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binstead and Bick as applied to claims 39, 40 and 43 above, and further in view of U.S. Patent No. 6,972,575 to Lambert et al. ("Lambert").

As to claim 41, Binstead discloses wherein the keymat (50) comprises a dielectric material such as plastic (Binstead, col. 4, l. 40). However, Binstead does not disclose expressly wherein the dielectric keymat material comprises a rubber material. Lambert discloses a capacitive proximity sensor wherein the dielectric material for surrounding a capacitive sensor may be a flexible dielectric material such as rubber or plastic (Lambert, col. 4, ll. 50-52). Because both Binstead and Lambert discloses dielectric materials of plastic or rubber, respectively, for enclosing a capacitive sensor, it would have been obvious to one skilled in the art to substitute one dielectric material for the other to achieve the predictable result of providing adequate insulation.

9. Claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binstead in view of Bick and Seely.

As to claim 1, Binstead discloses a capacitive sensing device for use in a keypad assembly of an electronic system, said capacitive sensing device comprising: a capacitive sensor (12, 14) configured to be disposed within said keypad assembly without requiring the formation of key post holes there through, said capacitive sensor is coupled to a keymat (50) having a plurality of keys formed therein, said capacitive sensor integrated within said keymat, said capacitive sensor having a flexibility which enables desired tactile response during use of said plurality of keys of said keypad assembly (Binstead, Figs. 2b, 2c). Binstead does not disclose expressly wherein the capacitive sensor is a substantially transparent single sheet.

Bick discloses a keypad assembly of an electronic system, said capacitive sensing device comprising: a substantially transparent capacitive sensor (19) for passing through light emitted by a backlight, thereby illuminating the keypad assembly, said substantially transparent capacitive sensor integrated within said keymat; said substantially transparent capacitive sensor having a flexibility which enables desired tactile response during use of

said plurality of keys of said keypad assembly; and a keypad layer that is deformable to actuate a switch sensor (33a, 33b) below the capacitive sensor (Bick, col. 2, l. 35 – col. 3, l. 29). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Binstead by replacing the capacitive sensor with that of Binstead and adding the actuatable switch sensor below the deformable layer, as taught/suggested by Bick. The suggestion/motivation for doing so would have been to use the keypad assembly in two modes of operation, a touch pad mode (e.g., capacitive sensor) or a button depression mode (e.g., actuatable switch sensor) (Bick, Abstract). Moreover, it would have been obvious to a person of ordinary skill in the art to further modify the teachings of Binstead such that a backlight was proved such that the transparent capacitive sensor may pass through light for illuminating the keypad assembly. The suggestion/motivation for doing so would have been to illuminate the keypad assembly, thereby making the device more user-friendly in environments lacking sufficient ambient light, as one of ordinary skill in the art would appreciate.

Seely discloses a capacitive sensor in Figures 6-8B with a patterning of sensors that consolidates the conventional horizontal layer of sensors and vertical layer of sensors into one single sheet layer (Seely, col. 5, ll. 48-59). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the substantially transparent capacitive sensor of Binstead and Bick, such that the sensors were patterned as taught/suggested by Seely to consolidate the sensor into a single layer. The suggestion/motivation for doing so would have been to achieve a compact capacitive sensing device that significantly reduces the cost of production without adversely affecting its functionality (Seely, col. 2, ll. 15-25).

As to claim 2, Binstead as modified by Bick teaches/suggests wherein said substantially transparent capacitive sensor (19, 28) comprises a substantially transparent

substrate (28) wherein the patterning of capacitive sensors (22, 24) is comprised of a substantially transparent material and is disposed above said substantially transparent substrate (Bick, col. 2, l. 35 – col. 3, l. 29). Furthermore, as discussed above Seely discloses a capacitive sensor with a patterning of sensors that consolidates the conventional horizontal layer of sensors and vertical sensors into one single sheet layer. Specifically, Seely discloses in Figures 6-8B a first pattern of conductive sensors (68, 69) disposed within a sensing region; a second pattern of conductive sensors (68) ("floating") disposed within said sensing region, said first pattern of conductive sensors (68, 69) and said second pattern of conductive sensors (68) ("floating") disposed in a common single layer; and a plurality of conductive bridges (104) disposed to electrically couple portions of said second pattern of conductive sensors (68) ("floating") (Seely, col. 5, l. 48 – col. 7, l. 11). Therefore, when the teachings of Binstead, Bick and Seely are combined for the reasons stated above, it is inherent that the first and second patterns are disposed above the transparent substrate and the conductive sensors are comprised of a substantially transparent material (because the embodiment of Bick requires the transmission of light through the capacitive sensors).

As to claim 3, Binstead as modified by Bick and Seely teaches/suggests wherein said plurality of conductive bridges is opaque (Seely, col. 5, l. 48 – col. 6, l. 31).

As to claim 4, Binstead as modified by Bick and Seely teaches/suggests wherein said substantially transparent material comprises indium tin oxide (Bick, col. 2, ll. 53-58).

As to claim 13, note the above discussion with respect to claims 1 and 2. Neither Binstead, Bick nor Seely disclose expressly wherein said plurality of conductive bridges is selectively disposed to lessen visual interference with indicia of said keys of said keypad assembly (e.g., at least one of said plurality of keys). In order to establish

obviousness under 35 U.S.C. 103, it must appear that the state of relevant prior art was such that the claimed invention would have been obvious to one of ordinary skill in the art; in judging ordinary level of skill in the art, it is the level of skill of those who normally attack the problems of the art that counts; persons who do most of the problem solving in involved art are graduate engineers; as such they are chargeable with general knowledge concerning principles of engineering, outside the narrow field involved, and with skills, ingenuity, and competence of the average professional engineer. *Mueller Brass CO. v. Reading Industries*, 176 USPQ 361, 372 (1972). In the instant case, the teachings of Binstead, Bick and Seely are combinable for the same reasons set forth in the paragraphs regarding claims 1 and 2. Bick requires the capacitive sensor (19) to be substantially transparent so as to permit a light emitted from EL layer (29) to penetrate therethrough and illuminate indicia on the keys (18) (Bick, col. 2, l. 35 – col. 3, l. 29). However, Seely discloses electrically connecting portions of a second patterning of capacitive sensors through the use of opaque conductive bridges (Seely, col. 5, l. 48 – col. 6, l. 31).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to selectively dispose the conductive bridges so as to lessen visual interference with indicia of at least one of said plurality of keys (18). The suggestion/motivation would have been because a graduate engineer, with the ingenuity and competence of the average professional engineer, would understand that a fundamental problem occurs when combining the teachings of Binstead, Bick and Seely. Specifically, disposing an opaque material in between an EL layer emitting a light source and an indicia on a key would disadvantageously block a portion of the emitted light, thus reducing the brightness at the surface of the key as perceived by an individual. Therefore, going back to the original problem, a fundamental solution is to minimize the occurrence of the opaque material disposed in between the EL layer emitting a light source and the

indicia of said keys of said keypad assembly, resulting in the limitations as presently claimed.

As to claim 14, all of the claim limitations have already been discussed and met by Binstead, Bick and Seely as detailed in the above paragraphs with respect to claims 1 and 2.

As to claim 58, all of the claim limitations have already been discussed and met by Binstead, Bick and Seely as detailed in the above paragraphs with respect to claims 1 and 2.

As to claims 15, 21, 25, 26, 44-46, 55-57, 59, 67 and 68, all of the claim limitations have already been discussed and met by Binstead, Bick and Seely as detailed in the above paragraphs with respect to claims 1-4 and 13.

10. Claims 5-12, 16-20, 22-24, 47-54 and 60-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binstead, Bick and Seely as applied to claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68 above, and further in view of Kleinhans.

As to claims 5 and 10, note the above discussion with respect to claims 1 and 2. Neither Binstead, Bick nor Seely disclose expressly wherein the first and second patterns of conductive sensors further comprise: at least a portion comprised of a substantially opaque conductive material electrically coupled to said substantially transparent material of said first and second patterns of conductive sensors. Kleinhans discloses a capacitive sensing device in Figures 1-3, analogous in art with Binstead, Bick and Seely in that all are directed towards detecting user input in a semiconductor device through the use of capacitor type sensors, wherein a substantially transparent conductive sensor (12)

comprises at least a portion comprised of a substantially opaque conductive (23) material electrically coupled to the substantially transparent conductive sensor (12) (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the capacitive sensing device of Binstead, Bick and Seely, such that the first and second patterns of conductive sensors comprise at least a portion comprised of a substantially opaque conductive material electrically coupled to said substantially transparent material of the first and second patterns of conductive sensors, as taught/suggested by Kleinhans. The suggestion/motivation for doing so would have been to represent indicia on a surface to be viewed by a user through light emitted by a light-emitting surface (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

As to claims 6 and 12, Kleinhans further discloses in Figures 1-3 wherein said portion of said substantially opaque conductive material further comprises openings (22) extending therethrough such that light is able to pass through said openings (22) of said substantially opaque conductive material (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

As to claim 7, Seely further discloses wherein said first pattern of conductive sensors is disposed to minimize capacitive interference with at least one of said plurality of conductive bridges (Seely, col. 4, ll. 47-52).

As to claims 8 and 11, Kleinhans further discloses in Figures 1-3 wherein said portion of said substantially opaque conductive material (23) overlies at least a portion of said substantially transparent material of said conductive sensors (12) (Kleinhans, col. 3, l. 66 – col. 4, l. 9).

As to claim 9, Kleinhans does not disclose expressly wherein the opaque material is conductive ink. Seely discloses wherein a substantially opaque conductive material comprises conductive ink and is disposed on the surface of the single sheet conductive sensor (Seely, col. 5, l. 48 – col. 6, l. 54.) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the opaque material of Kleinhans, such that it was conductive ink, as taught/suggested by Seely. The suggestion/motivation for doing so would have been because carbon ink is an inexpensive process (Seely, col. 5, l. 48 – col. 6, l. 54).

As to claims 16-20, 22-24, 47-54 and 60-66, all of the claim limitations have already been discussed and met by Binstead, Bick, Seely and Kleinhans as detailed in the above paragraphs with respect to claims 5-12.

11. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binstead in view of Bick and Kleinhans.

As to claims 42, all of the claim limitations have already been discussed and met by Binstead, Bick and Kleinhans as detailed in the above paragraphs with respect to claims 5 and 6.

12. Claims 27-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binstead in view of Bick, Seely and Kleinhans.

As to claim 27, all of the claim limitations have already been discussed and met by Binstead, Bick, Seely and Kleinhans as detailed in the above paragraphs with respect to claims 1, 2 and 5.

As to claims 28-38, all of the claim limitations have already been discussed and met by Binstead, Bick, Seely and Kleinhans as detailed in the above paragraphs with respect to claims 3, 4 and 6-13.

Response to Arguments

13. Applicant's arguments filed Oct. 25, 2007, have been fully considered but they are not persuasive.

Applicants argue that Bick teaches a capacitive sensor 19 that is positioned below a keymat 17, thus failing to teach the capacitive sensor integrated within the keymat as presently claimed (Remarks, pp. 15-19). Examiner disagrees and respectfully submits that elements 17, 18, and 27-30 of Bick may be relied upon to disclose a "keymat", as presently claimed. The Specification of the instant application discloses "a keymat 210 that is deformable to actuate switch sensors 214" (Spec., p. 8, ll. 10-13). Bick discloses wherein elements 17, 18, and 27-30 are deformable to actuate switch sensors 33a and 33b (Bick, col. 2, l. 35 – col. 3, l. 29). Furthermore, elements 17, 18 and 27-30 comprise a plurality of keys 18 formed therein (Bick, Fig. 3), as presently claimed. Thus, elements 17, 18 and 27-30 read on the definition of a "keymat" as provided by applicants in the specification. Moreover, there is no disclosure in the claim language or specification that would prohibit elements 17, 18 and 27-30 of Bick to be read on a "keymat".

An updated search was conducted for claims 1-68, and new grounds of rejection are made in view of Binstead.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander S. Beck whose telephone number is (571) 272-7765. The examiner can normally be reached on M-F, 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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asb
Jan. 3, 2008

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